

## CLAIMS:

1. A video encoder for predictively encoding images with reference to one reference image in a first (P) prediction mode and to two reference images in a second (B) prediction mode, comprising a motion estimation circuit using a first interval of a frame encoding period in the second (B) prediction mode to search motion vectors representing motion between an input image and one of said two reference images, and using a second interval of said frame encoding period to search motion vectors representing motion between said input image and the other one of said two reference images; characterized in that the motion estimation circuit is arranged to use the first interval of the frame encoding period in the first (P) prediction mode to search motion vectors representing motion between an input image and said one reference image, and to use the second interval of said frame encoding period to refine the motion vectors found in the first interval.
2. A video encoder as claimed in claim 1, in which the motion estimation circuit is arranged to search a motion vector from among a plurality of given candidate motion vectors, said candidate motion vectors in the second interval being formed by predetermined variations of the motion vector found in the first interval.
3. A video encoder as claimed in claim 1 or 2, wherein said reference image in the first prediction mode is a previous image of a sequence of images, one of the reference images in the second prediction mode is a previous image of said sequence, and the other one of the reference images in the second prediction mode is a subsequent image of said sequence.
4. A method of predictively encoding images with reference to one reference image in a first (P) prediction mode and to two reference images in a second (B) prediction mode, comprising the steps of searching motion vectors representing motion between an input image and one of said two reference images in a first interval of a frame encoding period in the second (B) prediction mode, and searching motion vectors representing motion between said input image and the other one of said two reference images in a second interval

of said frame encoding period, characterized by the steps of searching motion vectors representing motion between an input image and said one reference image in the first interval of the frame encoding period in the first (P) prediction mode, and refining the motion vectors found in the first interval in the second interval of said frame encoding period.

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5. A method as claimed in claim 4, in which the step of searching a motion vector comprises selecting a motion vector from among a plurality of given candidate motion vectors, said candidate motion vectors in the second interval being formed by predetermined variations of the motion vector found in the first interval.

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6. A method as claimed in claim 4 or 5, wherein said reference image in the first prediction mode is a previous image of a sequence of images, one of the reference images in the second prediction mode is a previous image of said sequence, and the other one of the reference images in the second prediction mode is a subsequent image of said sequence.